

What is claimed is:

1. An image forming apparatus, comprising:
  - a roll receiving portion for receiving a continuous recording sheet wound into a roll shape;
  - a sheet transporting portion for transporting the continuous recording sheet from the roll receiving portion;
  - a cutting portion for cutting the continuous recording sheet that is sent out, into a desired size;
  - an image forming portion for forming a toner image on a recording sheet;
  - a fixing portion for fixing the toner image to the recording sheet by heating the recording sheet on which the toner image is formed;
  - a cooling portion for cooling the recording sheet to which the toner image has been fixed; and
  - a curl correcting portion for correcting a curl of the recording sheet when the recording sheet is cooled.
2. An image forming apparatus according to claim 1, wherein:
  - the cooling portion includes a flat region for retaining the sheet flat, and cools the recording sheet from at least one side surface thereof in the flat region; and
  - the curl correcting portion is a pressing member for retaining the recording sheet, which is transported to the flat region, flat.

3. An image forming apparatus according to claim 1, wherein:  
the cooling portion is a heat sink including a flat region;  
the curl correcting portion includes multiple pressing rolls  
that are rotatable and press the recording sheet transported to  
the flat region toward a flat region side; and

of the multiple pressing rolls, a pressing roll arranged on  
a downstream side in a transport direction of the recording sheet  
has a rotational speed higher than the rotational speed of a pressing  
roll arranged on an upstream side in the transport direction of  
the recording sheet.

4. An image forming apparatus according to claim 1, wherein  
the fixing portion, the cooling portion, and the curl correcting  
portion compose a belt fixing device,

the belt fixing device including:

a heating roll;

a tension roll;

an endless fixing belt that is rotatably stretched  
between the heating roll and the tension roll;

a pressurizing rotating member that is press-contacted  
with the heating roll through the endless fixing belt; and

a heat sink that contacts the flat region from an inside  
of the flat region, the flat region being arranged on a downstream

side of the heating roll in a rotational direction of the endless fixing belt,

wherein the recording sheet is brought into close contact with the endless fixing belt in a press-contact portion between the heating roll and the pressurizing rotating member, and transported and cooled while being in close contact with the endless fixing belt.

5. An image forming apparatus, comprising:

a roll receiving portion for receiving a continuous recording sheet wound into a roll shape;

a sheet transporting portion for transporting the continuous recording sheet from the roll receiving portion;

a cutting portion for cutting the continuous recording sheet that is sent out, into a desired size;

an image forming portion for forming a toner image on the recording sheet;

a first fixing portion for fixing the toner image to the recording sheet by heating the recording sheet on which the toner image is formed;

a second fixing portion for fixing the toner image to the recording sheet by heating the recording sheet on which the toner image is formed;

a cooling portion for cooling the recording sheet to which

the toner image has been fixed;

a curl correcting portion for correcting a curl of the recording sheet when the recording sheet is cooled; and

a selecting portion for selecting between a first mode in which the recording sheet on which the toner image is formed is passed through only the first fixing portion and a second mode in which the recording sheet is passed through all of the first fixing portion, the second fixing portion, the cooling portion, and the curl correcting portion.

6. An image forming apparatus according to claim 5, wherein the second fixing portion, the cooling portion, and the curl correcting portion compose a belt fixing device,

the belt fixing device including:

a heating roll;

a tension roll;

an endless fixing belt that is rotatably stretched between the heating roll and the tension roll;

a pressurizing rotating member that is press-contacted with the heating roll through the endless fixing belt; and

a heat sink that contacts the flat region from an inside of the flat region, the flat region being arranged on a downstream side of the heating roll in a rotational direction of the endless fixing belt,

wherein the recording sheet is brought into close contact with the endless fixing belt in a press-contact portion between the heating roll and the pressurizing rotating member, and transported and cooled while being in close contact with the endless fixing belt.

7. An image forming apparatus according to claim 5, wherein the selecting portion selects between the first mode and the second mode based on a type of the recording sheet.

8. An image forming apparatus according to claim 5, wherein the selecting portion selects the second mode in a case where the recording sheet is obtained by cutting the continuous recording sheet wound into a roll shape.

9. An image forming apparatus according to claim 5, wherein the cooling portion cools the recording sheet from a surface side of the recording sheet on which the toner image is formed.

10. An image forming apparatus according to claim 1, wherein the toner image is formed on an outer surface of the continuous recording sheet wound into a roll shape.

11. An image forming apparatus according to claim 1, wherein:

a surface of the continuous recording sheet wound into a roll shape is coated with a thermoplastic resin layer; and

the toner image is formed on the surface coated with the thermoplastic resin layer.

12. An image forming apparatus according to claim 1, wherein:  
the continuous recording sheet wound into a roll shape includes:

a base formed by coating one of one side and both sides of an original with a polyolefin resin coated layer; and

a thermoplastic resin layer coated on a surface of the base; and

the toner image is formed on the surface coated with the thermoplastic resin layer.

13. An image forming apparatus according to claim 1, wherein:  
a surface of the continuous recording sheet wound into a roll shape is coated with a thermoplastic resin layer;

the toner image is formed on the surface coated with the thermoplastic resin layer; and

the toner image is embedded into the thermoplastic resin layer by fixing.

14. An image forming apparatus according to claim 1, wherein:

a surface of the continuous recording sheet wound into a roll shape is coated with a thermoplastic resin layer;

the toner image is formed on the surface coated with the thermoplastic resin layer;

the toner image is embedded into the thermoplastic resin layer by fixing; and

the toner image is fixed to an inside of the thermoplastic resin layer by cooling.

15. An image forming apparatus according to claim 1, wherein the recording sheet on which a residual curl remains after curl correction is curled such that a surface on which the toner image is formed faces outward.

16. An image forming apparatus, comprising:

a sheet feeding portion for feeding a recording sheet; and  
an image forming portion for forming a toner image on the recording sheet,

the sheet feeding portion serving as a roll sheet feeding portion for feeding a continuous recording sheet wound into a roll shape.

17. An image forming apparatus according to claim 16, wherein:  
the sheet feeding portion includes multiple roll sheet feeding

portions; and

the multiple roll sheet feeding portions feed continuous recording sheets having different sizes in a direction of a roll shaft.

18. An image forming apparatus according to claim 16, wherein the sheet feeding portion includes:

a roll sheet feeding portion for feeding the continuous recording sheet wound into a roll shape; and

a standard-size sheet feeding portion for feeding a standard-size recording sheet that is placed flat,

the continuous recording sheet and the standard-size recording sheet being fed selectively.

19. An image forming apparatus according to claim 16, wherein the roll sheet feeding portion is detachably mountable to an image forming apparatus main body.

20. An image forming apparatus according to claim 16, wherein the roll sheet feeding portion includes a roll retaining portion for rotatably retaining the continuous recording sheet wound into a roll shape.

21. An image forming apparatus according to claim 16, wherein



the roll sheet feeding portion includes:

a roll retaining portion for rotatably retaining the continuous recording sheet wound into a roll shape;

a roll transporting portion for transporting the continuous recording sheet from the roll retaining portion; and

a cutting portion for cutting the transported continuous recording sheet into a desired size.

22. An image forming apparatus according to claim 20, wherein:

a material of a front surface of the continuous recording sheet is different from a material of a reverse surface of the continuous recording sheet; and

at least one of the continuous recording sheet wound into a roll shape and the roll retaining portion includes a reverse mounting prohibiting portion for regulating a mounting direction of the continuous recording sheet so as to transport the continuous recording sheet while setting the front and reverse surfaces of the continuous recording sheet correctly.

23. An image forming apparatus according to claim 16, wherein at least one side surface of the continuous recording sheet has a resin layer.

24. An image forming apparatus according to claim 23, wherein

the continuous recording sheet is wound into a roll shape with the resin layer facing outward.

25. An image forming apparatus according to claim 16, wherein at least one side surface of the continuous recording sheet has a toner receiving layer made of a thermoplastic resin.

26. An image forming apparatus according to claim 25, wherein the image forming portion forms the toner image on a receiving layer side of the continuous recording sheet.

27. An image forming apparatus according to claim 23, further comprising a smoothing fixing portion that includes a fixing belt, the smoothing fixing portion fixing the toner image to the recording sheet by bringing a resin layer side of the recording sheet into close contact with the fixing belt and then cooling the recording sheet to peel the recording sheet from the fixing belt.